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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,825	03/10/2004	Ragip Kurceren	944-001.129	5035

4955 7590 08/02/2007

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2624	

MAIL DATE	DELIVERY MODE
08/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,825	KURCEREN ET AL.	
	Examiner	Art Unit	
	Jared W. Radkiewicz	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 9/7/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. **Claims 1-3, 11-12, 15-18, 23, and 24 are** provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7, 13-21, and 27 of copending Application No. 10/737,184. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are both directed toward transform domain video editing by manipulating transform coefficients rather than pixels. Method **claims 1-3 and 11-12** are in conflict with claims 1-7, "video editing device" **claims 15-18** are in conflict with claims 13-18, "electronic device" **claim 23** is in conflict with claims 18-21, and software **claim 24** is in conflict with claim 27.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

1. Applicant is advised that should **claim 2** be found allowable, **claim 11** will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 24-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 24-30 define a software product embodying functional descriptive material. However, the claim does not define a computer-readable medium or computer-readable memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some

computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on "computer-readable medium" or equivalent; assuming the specification does NOT define the computer readable medium as a "signal", "carrier wave", or "transmission medium" which are deemed non-statutory (refer to "note" below). Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-30** are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al. (IEEE Journal on Selected Areas in Communications, Vol. 13, No. 1, 0733-8716/95; S. Chang et al.; "Manipulation and Compositing of MC-DCT Compressed Video"; pp. 1-10; 1995.).

Regarding claim 1, Chang teaches a method of editing a bitstream carrying video data indicative of a video sequence, said method comprising:

acquiring from the bitstream data indicative of transform coefficients of at least part of the video sequence ("we derive one set of algorithms to perform all above mentioned manipulations in the transform domain, in which video signals are represented by transform coefficients", Chang Section I Page 2); and

modifying the acquired data in the transform domain for providing modified data in a modified bitstream in order to achieve a video effect in said at least part of the video sequence (Chang Section III details DCT domain video manipulation such as Overlap (A), Pixel Multiplication (B), Translation (C), Linear Filtering (D), and Scaling (E)).

Regarding **claim 15**, Chang teaches the method of claim 1 implemented on hardware ("multimedia workstation" Chang Section I Page 1).

Regarding **claim 24**, Chang teaches the method of claim 1 implemented as a software product (computers such as a "multimedia workstation" execute software commands; Chang Section I Page 1).

Regarding **claims 2, 16, and 26**, Chang teaches the method of claim 1, wherein said acquiring comprises:

decoding the bitstream for obtaining a plurality of quantized transform coefficients ("DCT coefficients", Chang Section VI:A Page 7); and

converting the quantized transform coefficients by inverse quantization for providing the transform coefficients ("inverse quantization", Chang Section VI:A Page 7).

Regarding **claims 3, 17 and 27**, Chang teaches the method of claim 2, wherein the modified data contain a plurality of quantized modified transform coefficients, and said modifying comprises changing the transform coefficients for providing a plurality of modified transform coefficients, said method further comprising:

quantizing the modified transform coefficients for providing a plurality of quantized modified transform coefficients in the modified bitstream ("the final DCT coefficients still need to be quantized", Chang Section VI:B Page 9).

Regarding **claims 4 and18**, Chang teaches the method of claim 1, further comprising:

obtaining further data indicative of a plurality of further transform coefficients, wherein said modifying comprises combining the further data with the acquired data for providing the modified data ("Semitransparent overlapping requires a linear combination of the foreground and background pixels", Chang Section III:A Page 2).

Regarding **claim 5**, Chang teaches the method of claim 4, wherein said combining comprises:

multiplying the further data by a first weighting parameter for providing a first weighted data; multiplying the acquired data by a second weighting parameter for providing a second weighted data; and summing the first weighted data and the second weighted data for providing the further data (Equation (1) "where $P_{new}(i,j) = \alpha \cdot P_a(i,j) + (1-\alpha) \cdot P_b(i,j)$ are new pixels, foreground pixels, background pixels, and the transparency factor [30].", Change Section III:A Page 2).

Regarding **claim 6**, Chang teaches the method of claim 5, wherein one or both of the first and second weighting parameters are adjusted to achieve a blending effect ("a linear combination of the foreground and background pixels", Change Section III:A Page 2).

Regarding **claim 7**, Chang teaches the method of claim 5, wherein one or both of the first and second weighting parameters are adjusted to achieve a sliding transitional effect ("move each video object around flexibly", Change Section III:C Page 3).

Regarding **claim 8**, Chang teaches the method of claim 4, wherein the further data is indicative of the further transform coefficients of a different part of the video sequence ("Each output image block has contributions from several input blocks", Change Section III:D Page 4).

Regarding **claim 9**, Chang teaches the method of claim 4, wherein the further data is obtained from a different bitstream ("multi-source video conferencing", Change Section III:C Page 3).

Regarding **claims 10 and 19**, Chang teaches the method of claim 4, wherein the further data is obtained from a memory device via a transform operation ("The DCT of H_{i1} and H_{i2} can be precomputed and stored in memory", Change Section III:C Page 3).

Regarding **claim 11**, Chang teaches the method of claim 1, further comprising:

decoding the bitstream for obtaining a plurality of quantized transform coefficients ("DCT coefficients", Chang Section VI:A Page 7); and

converting the quantized transform coefficient in an inverse quantization operation for obtaining a plurality of dequantized transform coefficients for use in said modifying ("inverse quantization", Chang Section VI:A Page 7).

Regarding **claim 12**, Chang teaches the method of claim 11, further comprising:

inversely transforming the dequantized transform coefficients for obtaining information indicative of a prediction error (Chang teaches an "inverse DCT" in Section III, and specifies "prediction error" as a part of DCT compressed video in Section II);

combining the prediction error with motion compensation information in the video data for providing further video data indicative of a reference frame ("Decoder" Figure 2);

transforming the further video data for providing transformed reference data and combining the transform reference data with the transform coefficient in said modifying. (Section III: Video Manipulation in the DCT Domain);

Regarding **claim 13**, Chang teaches the method of claim 12, further comprising:

obtaining a plurality of further transform coefficients from a memory device via a transform operation; and combining the further transform coefficients with the transform coefficient in said modifying ("The DCT of H_{i1} and H_{i2} can be precomputed and stored in memory.", Change Section III:C Page 3).

Regarding **claim 14**, Chang teaches the method of claim 12, further comprising:

obtaining a plurality of further transform coefficients from a different bitstream; and combining the further transform coefficients with the transform coefficients in said modifying (the overlap method outlined in section III use two different video sources).

Regarding **claim 20**, Chang teaches the editing device of claim 15, further comprising:

a further acquiring module for obtaining further data indicative of a plurality of further transform coefficients ("Semitransparent overlapping requires a linear combination of the foreground and background pixels", with background pixels being derived from a further set of transform coefficients; Chang Section III:A Page 2);

an inverse transform module, responsive to the further data, for providing information indicative of a prediction error (Chang teaches an "inverse DCT" in Section III, and specifies "prediction error" as a part of DCT compressed video in Section II);

a combination module, responsive to the prediction error and motion compensation information in the video data, for providing reference data indicative of a reference frame ("Decoder" Figure 2); and

a transform module, responsive to the reference data, for providing transformed reference data to the modification module so as to change the transform coefficient based on the transformed reference data (Section III: Video Manipulation in the DCT Domain).

Regarding **claim 21**, Chang teaches the editing device of claim 20, further comprising:

a further transform module, responsive to additional data in a memory device, for providing transformed additional data to the modification module so as to change the transform coefficients further based on the transformed additional data (Section III:A details an algorithm responsive to multiple coefficient inputs).

Regarding **claim 22**, Chang teaches a video coding system, comprising:

a decoder (Chang Figure 2); and

an encoder for receiving a bitstream carrying video data indicative of a video sequence (Chang Figure 2), wherein the encoder comprises a video editing device for editing the bitstream, the editing device comprising:

an acquiring module, responsive to the bitstream, for acquiring data indicative of transform coefficients of at least part of the video sequence ("DCT coefficients", Chang Section II Page 2); and

a modification module, responsive to the acquired data, for changing the transform coefficients in the transform domain for providing modified data in a modified bitstream in order to achieve a video effect in said at least part of the video sequence (Chang Section III entitled "Video manipulation in the DCT Domain" outlines a number of transform domain operations), and

wherein the decoder is operable

in a first mode for reconstructing video from the video data carried in the bitstream (Chang Figure 2 illustrates unmodified decoding), and

in a second mode for reconstructing video from the modified data in the modified bitstream (Chang Section III teaches modified decoding).

Regarding **claim 23**, Chang teaches an electronic device comprising:

a video data acquisition means for acquiring a bitstream carrying a video sequence having video data ("we derive one set of algorithms to perform all above mentioned manipulations in the transform domain, in which video signals are represented by transform coefficients", Chang Section I Page 2); and

a video editing device for editing the bitstream to achieve a video effect (Chang Section III entitled "Video manipulation in the DCT Domain" outlines a number of transform domain operations), the editing device comprising:

a first module for obtaining from the bitstream transform coefficients of at least a part of the video sequence ("DCT coefficients", Chang Section II Page 2);

a second module for modifying the transform coefficients in the transform domain for providing modified transform coefficients; and a third module for converting the modified transform coefficients into modified video data in a modified bitstream (Chang Section III entitled "Video manipulation in the DCT Domain" outlines a number of transform domain operations).

Regarding **claim 25**, Chang teaches the software product of claim 24, further comprising:

a code for mixing the transform coefficients of said at least part of the video sequence with other transform coefficients (Section III:A details an algorithm responsive to multiple coefficient inputs).

Regarding **claim 28**, Chang teaches the software product of claim 25, wherein the code for mixing comprises:

a code for multiplying the transform coefficients by a first weighting parameter for providing a first weighted data, and multiplying the other transform coefficients by a second weighting parameter for providing a second weighted data; and a code for

summing the first weighted data with the second weighted data for providing the modified data Equation (1) "where $P_{new}(i,j) = \alpha \cdot P_a(i,j) + (1-\alpha) \cdot P_b(i,j)$ are new pixels, foreground pixels, background pixels, and the transparency factor [30].", Change Section III:A Page 2).

Regarding **claim 29**, Chang teaches the software product of claim 25, further comprising:

a code for extracting stored data from a memory for providing further data; and a code for transforming the further data for providing the other transform coefficients ("The DCT of H_{i1} and H_{i2} can be precomputed and stored in memory", Change Section III:C Page 3).

Regarding **claim 30**, Chang teaches the software product of claim 24, further comprising:

a code for decoding the bitstream for obtaining a plurality of quantized transform coefficients ("DCT coefficients", Chang Section VI:A Page 7); and

a code for converting the quantized transform coefficient in an inverse quantization operation for obtaining a plurality of the dequantized transform coefficients ("inverse quantization", Chang Section VI:A Page 7);

a code for inversely transforming the dequantized transform coefficients for obtaining information indicative of a prediction error (Chang teaches an "inverse DCT" in

Section III, and specifies "prediction error" as a part of DCT compressed video in Section II);

a code for combining the prediction error with motion compensation information in the video data for providing further video data indicative of a reference frame ("Decoder" Figure 2);

a code for transforming the further video data for providing transformed reference data (Section III: Video Manipulation in the DCT Domain); and

a code for mixing the transform reference data with the transform coefficient for providing the modified data (Section III:A details an algorithm responsive to multiple coefficient inputs).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared W. Radkiewicz whose telephone number is (571) 270-1577. The examiner can normally be reached on 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JWR

/Brian P. Werner/
Supervisory Patent Examiner (SPE), Art Unit 2624